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Abstract:

The invention relates to a fiberoptic current or magnetic field sensor having a plurality of sensor heads, and to a corresponding measurement method. The sensor has a light source; $N \geq 2$ sensor heads; at least one phase modulation unit; a detector; a control and evaluation unit. The at least one phase modulation unit is connected to at least one of the sensor heads. Lightwaves can be differentially phase-modulated in a non-reciprocal fashion by means of the at least one phase modulation unit. Modulation amplitudes $\phi_{0,n}$ and modulation frequencies ν_n are selected as a function of modulation-relevant optical path lengths ℓ_n .